

Comments on Contingency and Risk of the Project

The Baseline Change Proposal (BCP) for the Run IIb CDF Detector Upgrade contains no new scope from the baseline proposed at the time of the Baseline Readiness Review (24 September 2002) or External Independent Review (4 November 2002). The BCP is simply a subtraction of the elements in our baseline plan that are needed for the construction and installation of the replacement silicon detector. Consequently, the contingency and risk assessments on the remaining elements of the project, done at that time, are still appropriate.

The contingency estimate of the project was made by performing an estimate on each item in the Work Breakdown Structure (WBS) at the lowest level in the structure. The contingency applied to each element was given in accordance with the procedure detailed in section 7 of the Run IIb CDF Detector Project Management Plan (PMP). The specific contingency levels chosen for each element can be obtained from the WBS Dictionaries submitted to each of the 2002 reviews mentioned above. We feel that the contingency estimate performed last year remains appropriate for the project at this time.

Similarly, the risk associated with each of the subprojects was analyzed a year ago, and found acceptable. No new information has come to light that questions these conclusions were reached, so analysis of the risk remains appropriate. Risk was analyzed in accordance with the methods described in Section 9 of the PMP.

Risk Associated with the Installation

The cancellation of the silicon construction and its associated installation creates a different environment for the installation of the remaining subprojects than had been planned for the original baseline. All installation activities on the central detector must now occur in the collision hall. The implication is significant for the Calorimeter Preshower installation, since the limited space available in the collision hall restricts access to the inner radius of the central calorimeter. Installation of this system in the collision hall confronts space restrictions that elevate the risk to personnel, equipment, and schedule, when compared to an assembly hall installation. However, this new situation has been studied, and it is believed that the risk can be managed, and reduced to acceptable levels. Two installation scenarios are currently under discussion, the first of which is documented (CDF internal note #6653) and involves the removal of the north side muon system to gain access to the calorimeter. A second approach to the installation, without the muon system removal, represents a strategy with greater risk to the equipment and personnel, and reduced risk to the schedule. Neither of these approaches will be attempted without significant engineering review, detailed installation procedures, and job hazard analyses. More work remains to be done, but the complexity and overall risk of this installation is comparable to other collision hall installations we have performed in the past (muon chamber and scintillator installations). The preshower installation does not represent a radical departure from installation work done for the Run IIa. Consequently, we believe that the installation risk can be reduced to an acceptable level.

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